

Name: \_\_\_\_\_

### p1105: Factoring when $a = 1$ (v2)

**Example: Factor**  $x^2 + 5x - 24$

Find two numbers whose product is  $-24$  and whose sum is  $5$ . Focus on finding factor pairs of  $-24$ . Eventually you consider  $8$  and  $-3$  because  $(8)(-3) = -24$ . You verify this pair is correct because  $(8) + (-3) = 5$ . Thus, your answer:

$$(x + 8)(x - 3)$$

1. Factor  $x^2 + 2x - 48$

$$(x - 6)(x + 8)$$

2. Factor  $x^2 + 5x + 6$

$$(x + 2)(x + 3)$$

3. Factor  $x^2 + 14x + 49$

$$(x + 7)(x + 7)$$

4. Factor  $x^2 + 4x - 21$

$$(x - 3)(x + 7)$$

5. Factor  $x^2 - 10x + 21$

$$(x - 7)(x - 3)$$

6. Factor  $x^2 + 7x - 8$

$$(x - 1)(x + 8)$$

7. Factor  $x^2 + 4x - 12$

$$(x - 2)(x + 6)$$

8. Factor  $x^2 + 2x - 8$

$$(x + 4)(x - 2)$$

9. Factor  $x^2 + 9x + 8$

$$(x + 8)(x + 1)$$

10. Factor  $x^2 + 9x + 20$

$$(x + 5)(x + 4)$$

11. Factor  $x^2 - 8x - 9$

$$(x - 9)(x + 1)$$

12. Factor  $x^2 + 6x - 7$

$$(x + 7)(x - 1)$$

13. Factor  $x^2 - 6x + 5$

$$(x - 5)(x - 1)$$

14. Factor  $x^2 + 9x + 18$

$$(x + 3)(x + 6)$$

15. Factor  $x^2 - 2x - 63$

$$(x - 9)(x + 7)$$